

### SUMMARY TABLE

Component	Total Capital Costs	Total Annual O&M Costs	Total Net Present Worth
<u>Waste</u>			
Alternative 1 - No Action	\$ -	\$ -	\$ -
Alternative 2 - Removal and Off-Site Disposal	\$ 1,798,211	\$ -	\$ 1,580,700
<u>Soil/Fill</u>			
Alternative 1 - No Action	\$ -	\$ -	\$ -
Alternative 2 - Institutional Controls and NAPL Removal	\$ 303,322	\$ 8,125	\$ 356,100
Alternative 3 - Institutional Controls, Engineering Controls, and NAPL Removal	\$ 11,177,530	\$ 75,000	\$ 10,483,700
Alternative 4 - Institutional Controls, Engineering Controls, Focused Removal with Off-Site Disposal of Lead, and NAPL Removal	\$ 13,660,285	\$ 75,000	\$ 12,665,900
Alternative 5 - Institutional Controls, In-Situ Remediation, Engineering Controls, and NAPL Removal	\$ 15,259,630	\$ 68,750	\$ 14,004,000
<u>Groundwater</u>			
Alternative 1 - No Action	\$ -	\$ -	\$ -
Alternative 2 - Institutional Controls, Site Containment at River Edge, and Pump and Treat	\$ 30,590,844	\$ 1,125,000	\$ 34,258,600
Alternative 3 - Institutional Controls and In-Situ Remediation	\$ 28,459,770	\$ 131,250	\$ 20,844,800
Alternative 4 - Institutional Controls, Pump and Treat, and Targeted Periodic In-Situ Remediation	\$ 12,831,750	\$ 1,500,000	\$ 24,234,400
Alternative 5 - Institutional Controls, Site Containment at River Edge and In-Situ Remediation	\$ 19,543,022	\$ 131,250	\$ 16,326,900
<u>Sewer Water</u>			
Alternative 1 - No Action	\$ -	\$ -	\$ -
Alternative 2 - Removal and Off-Site Disposal	\$ 27,981	\$ -	\$ 24,900
<u>Soil Gas</u>			
Alternative 1 - No Action	\$ -	\$ -	\$ -
Alternative 2 - Institutional Controls, Air Monitoring or Engineering Controls (existing occupied buildings) and Site-Wide Engineering Controls (future buildings)	\$ 123,525	\$ 31,500	\$ 449,800
Alternative 3 - Institutional Controls, Site-Wide Engineering Controls (future buildings), and Air Monitoring or Engineering Controls and In-Situ Remediation of Soil/Fill (existing occupied buildings)	\$ 4,591,968	\$ -	\$ 4,050,800

**Summary of Present Value Analysis**

Net Present Value Factor	7%																			
Discount Rate	7%																			
Inflation Rate	0%																			
YEAR	COST PV	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
<b>Waste - Alternative 2, Removal and Off-Site Disposal</b>																				
TOTAL PRESENT VALUE	\$ 1,580,700		\$ 1,798,211																	
Capital Costs	\$ 1,580,700	\$ -	\$ 163,474	\$ 1,634,738	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Pre-construction Activities	\$ 152,800	\$ -	\$ 163,474	\$ -	\$ -	\$ -														
Mobilization and Demobilization	\$ 59,500	\$ -	\$ -	\$ 68,114	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Direct Implementation Costs	\$ 1,189,900	\$ -	\$ -	\$ 1,362,281	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other Indirect Costs	\$ 178,500	\$ -	\$ -	\$ 204,342	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
O&M Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Soil/Fill - Alternative 2, Institutional Controls and LNAPL Removal</b>																				
TOTAL PRESENT VALUE	\$ 356,100																			
Capital Costs	\$ 268,000	\$ -	\$ 50,302	\$ 253,020	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Pre-construction Activities	\$ 47,000	\$ -	\$ 50,302	\$ -	\$ -	\$ -														
Mobilization and Demobilization	\$ 9,200	\$ -	\$ -	\$ 10,543	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Direct Implementation Costs	\$ 184,200	\$ -	\$ -	\$ 210,850	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other Indirect Costs	\$ 27,600	\$ -	\$ -	\$ 31,628	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
O&M Costs	\$ 88,100	\$ -	\$ -	\$ -	\$ 8,125	\$ 8,125	\$ 8,125	\$ 8,125	\$ 8,125	\$ 8,125	\$ 8,125	\$ 8,125	\$ 8,125	\$ 8,125	\$ 8,125	\$ 8,125	\$ 8,125	\$ 8,125	\$ 8,125	\$ 8,125
<b>Soil/Fill - Alternative 3 Institutional Controls, Engineering Controls (Cap, Sheet Pile) and LNAPL Removal</b>																				
TOTAL PRESENT VALUE	\$ 10,483,700																			
Capital Costs	\$ 9,670,800	\$ -	\$ 1,350,230	\$ 9,827,300	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Pre-construction Activities	\$ 1,261,900	\$ -	\$ 1,350,230	\$ -	\$ -	\$ -														
Mobilization and Demobilization	\$ 350,400	\$ -	\$ -	\$ 401,138	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Direct Implementation Costs	\$ 7,007,400	\$ -	\$ -	\$ 8,022,750	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other Indirect Costs	\$ 1,051,100	\$ -	\$ -	\$ 1,203,412	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Diamond Alkali OU2 Contingency	\$ 174,700	\$ -	\$ -	\$ 200,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
O&M Costs	\$ 812,900	\$ -	\$ -	\$ -	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000
<b>Soil/Fill - Alternative 4, Institutional Controls, Engineering Controls (Cap, Sheet Pile), Focused Removal, and LNAPL Removal</b>																				
TOTAL PRESENT VALUE	\$ 12,665,900																			
Capital Costs	\$ 11,853,000	\$ -	\$ 1,575,935	\$ 12,084,350	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Pre-construction Activities	\$ 1,472,800	\$ -	\$ 1,575,935	\$ -	\$ -	\$ -														
Mobilization and Demobilization	\$ 432,500	\$ -	\$ -	\$ 495,181	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Direct Implementation Costs	\$ 8,650,200	\$ -	\$ -	\$ 9,903,625	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other Indirect Costs	\$ 1,297,500	\$ -	\$ -	\$ 1,485,544	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Diamond Alkali OU2 Contingency	\$ 174,700	\$ -	\$ -	\$ 200,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
O&M Costs	\$ 812,900	\$ -	\$ -	\$ -	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000
<b>Soil/Fill - Alternative 5, Institutional Controls, Engineering Controls (Sheet Pile), In-Situ Remediation, and LNAPL Removal</b>																				
TOTAL PRESENT VALUE	\$ 14,004,000																			
Capital Costs	\$ 13,258,900	\$ -	\$ 1,721,330	\$ 13,538,300	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Pre-construction Activities	\$ 1,608,700	\$ -	\$ 1,721,330	\$ -	\$ -	\$ -														
Mobilization and Demobilization	\$ 485,400	\$ -	\$ -	\$ 555,763	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Direct Implementation Costs	\$ 9,708,500	\$ -	\$ -	\$ 11,115,250	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other Indirect Costs	\$ 1,456,300	\$ -	\$ -	\$ 1,667,288	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Diamond Alkali OU2 Contingency	\$ 174,700	\$ -	\$ -	\$ 200,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
O&M Costs	\$ 745,100	\$ -	\$ -	\$ -	\$ 68,750	\$ 68,750	\$ 68,750	\$ 68,750	\$ 68,750	\$ 68,750	\$ 68,750	\$ 68,750	\$ 68,750	\$ 68,750	\$ 68,750	\$ 68,750	\$ 68,750	\$ 68,750	\$ 68,750	\$ 68,750
<b>Soil Gas - Alternative 2, Institutional Controls, Monitoring/Engineering Controls, and Site-Wide Engineering Controls</b>																				
TOTAL PRESENT VALUE	\$ 449,800																			
Capital Costs	\$ 108,400	\$ -	\$ 8,006	\$ 115,519	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Pre-construction Activities	\$ 7,500	\$ -	\$ 8,006	\$ -	\$ -	\$ -														
Mobilization and Demobilization	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Direct Implementation Costs	\$ 99,900	\$ -	\$ -	\$ 114,375	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other Indirect Costs	\$ 1,000	\$ -	\$ -	\$ 1,144	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
O&M Costs	\$ 341,400	\$ -	\$ -	\$ -	\$ 31,500	\$ 31,500	\$ 31,500	\$ 31,500	\$ 31,500	\$ 31,500	\$ 31,500	\$ 31,500	\$ 31,500	\$ 31,500	\$ 31,500	\$ 31,500	\$ 31,500	\$ 31,500	\$ 31,500	\$ 31,500

**Summary of Present Value Analysis**

Net Present Value Factor																
Discount Rate																
Inflation Rate																
YEAR	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054
<b>Waste - Alternative 2, Removal and Off-Site Disposal</b>																
<b>TOTAL PRESENT VALUE</b>																
<b>Capital Costs</b>	\$ -															
Pre-construction Activities																
Mobilization and Demobilization																
Direct Implementation Costs																
Other Indirect Costs																
<b>O&amp;M Costs</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
<b>Soil/Fill - Alternative 2, Institutional Controls and LNAPL Removal</b>																
<b>TOTAL PRESENT VALUE</b>																
<b>Capital Costs</b>	\$ -															
Pre-construction Activities																
Mobilization and Demobilization																
Direct Implementation Costs																
Other Indirect Costs																
<b>O&amp;M Costs</b>	\$ 8,125	\$ 8,125	\$ 8,125	\$ 8,125	\$ 8,125	\$ 8,125	\$ 8,125	\$ 8,125	\$ 8,125	\$ 8,125	\$ 8,125	\$ 8,125	\$ 8,125	\$ 8,125	\$ 8,125	
<b>Soil/Fill - Alternative 3 Institutional Controls, Engineering Controls (Cap, Sheet Pile) and LNAPL Removal</b>																
<b>TOTAL PRESENT VALUE</b>																
<b>Capital Costs</b>	\$ -															
Pre-construction Activities																
Mobilization and Demobilization																
Direct Implementation Costs																
Other Indirect Costs																
Diamond Alkali OU2 Contingency																
<b>O&amp;M Costs</b>	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	
<b>Soil/Fill - Alternative 4, Institutional Controls, Engineering Controls (Cap, Sheet Pile), Focused Removal, and LNAPL Removal</b>																
<b>TOTAL PRESENT VALUE</b>																
<b>Capital Costs</b>	\$ -															
Pre-construction Activities																
Mobilization and Demobilization																
Direct Implementation Costs																
Other Indirect Costs																
Diamond Alkali OU2 Contingency																
<b>O&amp;M Costs</b>	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	
<b>Soil/Fill - Alternative 5, Institutional Controls, Engineering Controls (Sheet Pile), In-Situ Remediation, and LNAPL Removal</b>																
<b>TOTAL PRESENT VALUE</b>																
<b>Capital Costs</b>	\$ -															
Pre-construction Activities																
Mobilization and Demobilization																
Direct Implementation Costs																
Other Indirect Costs																
Diamond Alkali OU2 Contingency																
<b>O&amp;M Costs</b>	\$ 68,750	\$ 68,750	\$ 68,750	\$ 68,750	\$ 68,750	\$ 68,750	\$ 68,750	\$ 68,750	\$ 68,750	\$ 68,750	\$ 68,750	\$ 68,750	\$ 68,750	\$ 68,750	\$ 68,750	
<b>Soil Gas - Alternative 2, Institutional Controls, Monitoring/Engineering Controls, and Site-Wide Engineering Controls</b>																
<b>TOTAL PRESENT VALUE</b>																
<b>Capital Costs</b>	\$ -															
Pre-construction Activities																
Mobilization and Demobilization																
Direct Implementation Costs																
Other Indirect Costs																
<b>O&amp;M Costs</b>	\$ 31,500	\$ 31,500	\$ 31,500	\$ 31,500	\$ 31,500	\$ 31,500	\$ 31,500	\$ 31,500	\$ 31,500	\$ 31,500	\$ 31,500	\$ 31,500	\$ 31,500	\$ 31,500	\$ 31,500	

Summary of Present Value Analysis

YEAR	COST PV	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Soil Gas - Alternative 3, Institutional Controls, Site-Wide Engineering Controls, and In-Situ Remediation																				
TOTAL PRESENT VALUE	\$ 4,050,800																			
Capital Costs	\$ 4,050,800	\$ -	\$ 653,904	\$ 3,938,064	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Pre-construction Activities	\$ 611,100	\$ -	\$ 653,904	\$ -	\$ -	\$ -														
Mobilization and Demobilization	\$ 147,000	\$ -	\$ -	\$ 168,293	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Direct Implementation Costs	\$ 2,939,900	\$ -	\$ -	\$ 3,365,867	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other Indirect Costs	\$ 352,800	\$ -	\$ -	\$ 403,904	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
O&M Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Sewer Water - Alternative 2, Removal and Off-Site Disposal																				
TOTAL PRESENT VALUE	\$ 24,900																			
Capital Costs	\$ 24,900	\$ -	\$ 6,606	\$ 21,375	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Pre-construction Activities	\$ 6,200	\$ -	\$ 6,606	\$ -	\$ -	\$ -														
Mobilization and Demobilization	\$ 800	\$ -	\$ -	\$ 891	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Direct Implementation Costs	\$ 15,600	\$ -	\$ -	\$ 17,813	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other Indirect Costs	\$ 2,300	\$ -	\$ -	\$ 2,672	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
O&M Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Groundwater - Alternative 2, Institutional Controls, Containment at River, and Pump and Treat																				
TOTAL PRESENT VALUE	\$ 34,258,600																			
Capital Costs	\$ 23,608,500	\$ -	\$ 1,261,844	\$ 1,261,844	\$ 1,261,844	\$ 26,805,313	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Pre-construction Activities	\$ 3,311,500	\$ -	\$ 1,261,844	\$ 1,261,844	\$ 1,261,844	\$ -														
Mobilization and Demobilization	\$ 845,700	\$ -	\$ -	\$ -	\$ -	\$ 1,108,555	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Direct Implementation Costs	\$ 16,914,200	\$ -	\$ -	\$ -	\$ -	\$ 22,171,094	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other Indirect Costs	\$ 2,537,100	\$ -	\$ -	\$ -	\$ -	\$ 3,325,664	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Diamond Alkali OU2 Contingency	\$ 152,600	\$ -	\$ -	\$ -	\$ -	\$ 200,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
O&M Costs	\$ 10,650,100	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,125,000	\$ 1,125,000	\$ 1,125,000	\$ 1,125,000	\$ 1,125,000	\$ 1,125,000	\$ 1,125,000	\$ 1,125,000	\$ 1,125,000	\$ 1,125,000	\$ 1,125,000	\$ 1,125,000	\$ 1,125,000	\$ 1,125,000
Groundwater - Alternative 3, Institutional Controls and In-Situ Remediation																				
TOTAL PRESENT VALUE	\$ 20,844,800																			
Capital Costs	\$ 19,602,300	\$ -	\$ 1,051,811	\$ 1,051,811	\$ 1,051,811	\$ 14,894,343	\$ -	\$ -	\$ -	\$ 6,939,996	\$ -	\$ -	\$ -	\$ -	\$ 3,469,998	\$ -	\$ -	\$ -	\$ -	\$ -
Pre-construction Activities	\$ 2,760,300	\$ -	\$ 1,051,811	\$ 1,051,811	\$ 1,051,811	\$ -														
Mobilization and Demobilization	\$ 804,400	\$ -	\$ -	\$ -	\$ -	\$ 1,054,347	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Direct Implementation Costs	\$ 13,624,500	\$ -	\$ -	\$ -	\$ -	\$ 10,676,953	\$ -	\$ -	\$ -	\$ 6,939,996	\$ -	\$ -	\$ -	\$ -	\$ 3,469,998	\$ -	\$ -	\$ -	\$ -	\$ -
Other Indirect Costs	\$ 2,413,100	\$ -	\$ -	\$ -	\$ -	\$ 3,163,042	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
O&M Costs	\$ 1,242,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250
Groundwater - Alternative 4, Institutional Controls, Targeted Pump and Treat, and Targeted Periodic In-Situ Remediation																				
TOTAL PRESENT VALUE	\$ 24,234,400																			
Capital Costs	\$ 10,034,200	\$ -	\$ 729,750	\$ 729,750	\$ 729,750	\$ 10,642,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Pre-construction Activities	\$ 1,915,100	\$ -	\$ 729,750	\$ 729,750	\$ 729,750	\$ -														
Mobilization and Demobilization	\$ 338,300	\$ -	\$ -	\$ -	\$ -	\$ 443,438	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Direct Implementation Costs	\$ 6,765,900	\$ -	\$ -	\$ -	\$ -	\$ 8,868,750	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other Indirect Costs	\$ 1,014,900	\$ -	\$ -	\$ -	\$ -	\$ 1,330,313	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
O&M Costs	\$ 14,200,200	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000
Groundwater - Alternative 5, Institutional Controls, Site Containment at River Edge and In-Situ Remediation																				
TOTAL PRESENT VALUE	\$ 16,326,900																			
Capital Costs	\$ 15,084,400	\$ -	\$ 781,607	\$ 781,607	\$ 781,607	\$ 16,829,414	\$ -	\$ -	\$ -	\$ 245,859	\$ -	\$ -	\$ -	\$ -	\$ 122,929	\$ -	\$ -	\$ -	\$ -	\$ -
Pre-construction Activities	\$ 2,051,200	\$ -	\$ 781,607	\$ 781,607	\$ 781,607	\$ -														
Mobilization and Demobilization	\$ 546,700	\$ -	\$ -	\$ -	\$ -	\$ 716,591	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Direct Implementation Costs	\$ 10,846,400	\$ -	\$ -	\$ -	\$ -	\$ 13,963,048	\$ -	\$ -	\$ -	\$ 245,859	\$ -	\$ -	\$ -	\$ -	\$ 122,929	\$ -	\$ -	\$ -	\$ -	\$ -
Other Indirect Costs	\$ 1,640,100	\$ -	\$ -	\$ -	\$ -	\$ 2,149,775	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
O&M Costs	\$ 1,242,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250

**Summary of Present Value Analysis**

YEAR	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054
Soil Gas - Alternative 3, Institutional Controls, Site-Wide Engineering Controls, and In-Situ Remediation																
<b>TOTAL PRESENT VALUE</b>																
<b>Capital Costs</b>	\$ -															
Pre-construction Activities																
Mobilization and Demobilization																
Direct Implementation Costs																
Other Indirect Costs																
<b>O&amp;M Costs</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
Sewer Water - Alternative 2, Removal and Off-Site Disposal																
<b>TOTAL PRESENT VALUE</b>																
<b>Capital Costs</b>	\$ -															
Pre-construction Activities																
Mobilization and Demobilization																
Direct Implementation Costs																
Other Indirect Costs																
<b>O&amp;M Costs</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
Groundwater - Alternative 2, Institutional Controls, Containment at River, and Pump and Treat																
<b>TOTAL PRESENT VALUE</b>																
<b>Capital Costs</b>	\$ -															
Pre-construction Activities																
Mobilization and Demobilization																
Direct Implementation Costs																
Other Indirect Costs																
Diamond Alkali OU2 Contingency																
<b>O&amp;M Costs</b>	\$ 1,125,000	\$ 1,125,000	\$ 1,125,000	\$ 1,125,000	\$ 1,125,000	\$ 1,125,000	\$ 1,125,000	\$ 1,125,000	\$ 1,125,000	\$ 1,125,000	\$ 1,125,000	\$ 1,125,000	\$ 1,125,000	\$ 1,125,000	\$ 1,125,000	\$ 1,125,000
Groundwater - Alternative 3, Institutional Controls and In-Situ Remediation																
<b>TOTAL PRESENT VALUE</b>																
<b>Capital Costs</b>	\$ -															
Pre-construction Activities																
Mobilization and Demobilization	\$ -	\$ -														
Direct Implementation Costs	\$ -	\$ -														
Other Indirect Costs	\$ -															
<b>O&amp;M Costs</b>	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250
Groundwater - Alternative 4, Institutional Controls, Targeted Pump and Treat, and Targeted Periodic In-Situ Remediation																
<b>TOTAL PRESENT VALUE</b>																
<b>Capital Costs</b>	\$ -															
Pre-construction Activities																
Mobilization and Demobilization	\$ -	\$ -														
Direct Implementation Costs	\$ -	\$ -														
Other Indirect Costs	\$ -															
<b>O&amp;M Costs</b>	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000
Groundwater - Alternative 5, Institutional Controls, Site Containment at River Edge and In-Situ Remediation																
<b>TOTAL PRESENT VALUE</b>																
<b>Capital Costs</b>	\$ -															
Pre-construction Activities																
Mobilization and Demobilization	\$ -	\$ -														
Direct Implementation Costs	\$ -	\$ -														
Other Indirect Costs	\$ -															
<b>O&amp;M Costs</b>	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250	\$ 131,250

**TABLE B-W1 - PRELIMINARY COST ESTIMATE**  
**WASTE - ALTERNATIVE 1**  
**NO ACTION**

Component	Estimated Quantity	Unit	Estimated Unit Cost	Estimated Capital Cost	Estimated Annual O&M Cost
<u>Capital Costs</u>					
<i>Direct Implementation Costs</i>				\$ -	
Subtotal - Direct Costs				\$ -	
<i>Indirect Costs</i>					
Remedial Design	(10% of Direct Costs)			\$ -	
Mobilization/Misc. Site Prep	(5% of Direct Costs)			\$ -	
Site Administration	(5% of Direct Costs)			\$ -	
Permitting/Legal Costs	(2% of Direct Costs)			\$ -	
Construction Management/Oversight	(10% of Direct Costs)			\$ -	
Subtotal - Indirect Costs				\$ -	
Contingency - 25% of Direct and Indirect Costs				\$ -	
<b>Total Capital Costs</b>				<b>\$ -</b>	
<u>Operation and Maintenance Costs</u>					
					\$ -
Subtotal - O&M Costs					\$ -
Contingency Reserve - 25% of O&M Costs					\$ -
<b>Total Annual O&amp;M Costs</b>					<b>\$ -</b>
<b>Net Present Worth of Annual O&amp;M Costs</b>				<b>\$ -</b>	
<b>Total Net Present Worth of Alternative</b>				<b>\$ -</b>	

Note: At time estimate was prepared, ENRCCI = 11392 (January 2020)

**TABLE B-W2 - PRELIMINARY COST ESTIMATE  
WASTE - ALTERNATIVE 2  
REMOVAL AND OFF-SITE DISPOSAL**

Component	Estimated Quantity	Unit	Estimated Unit Cost	Estimated Capital Cost	Estimated Annual O&M Cost
<u>Capital Costs</u>					
<i>Direct Implementation Costs</i>					
Consolidation/Containerization of Wastes	1	LS	\$ 25,000	\$ 25,000	
UST Removal/Disposal	6	Ea	\$ 15,000	\$ 90,000	
Impacted Soil Removal at USTs	3,500	CY	\$ 22	\$ 77,000	
Clean Backfill (provide/place/compact)	5,600	Ton	\$ 60	\$ 336,000	
6" Gravel Surface at NAPL Footprint	800	SY	\$ 18	\$ 14,400	
Waste Disposal, UST Soil (T&D)	5,800	Ton	\$ 75	\$ 435,000	
Waste Disposal, Non-haz liquids (T&D)	34,700	Gal	\$ 0.25	\$ 8,675	
Waste Disposal, LNAPLs (T&D)	4,500	Gal	\$ 1	\$ 4,500	
Waste Disposal, Non-haz solids/tanks (T&D)	30	Ton	\$ 75	\$ 2,250	
Soil Treatment for Disposal	880	Ton	\$ 25	\$ 22,000	
Water Management/Disposal	1	LS	\$ 55,000	\$ 55,000	
UST Closure Sampling/Reporting	1	LS	\$ 20,000	\$ 20,000	
Subtotal - Direct Costs				\$ 1,089,825	
<i>Indirect Costs</i>					
Remedial/Geotechnical Design	(10% of Direct Costs)			\$ 108,983	
Mobilization/Misc. Site Prep	(5% of Direct Costs)			\$ 54,491	
Site Administration	(5% of Direct Costs)			\$ 54,491	
Permitting/Legal Costs	(2% of Direct Costs)			\$ 21,797	
Construction Management/Oversight	(10% of Direct Costs)			\$ 108,983	
Subtotal - Indirect Costs				\$ 348,744	
Contingency - 25% of Direct and Indirect Costs				\$ 359,642	
Total Capital Costs				\$ 1,798,211	
<u>Operation and Maintenance Costs</u>					\$ -
Subtotal - O&M Costs					\$ -
Contingency Reserve - 25% of O&M Costs					\$ -
Total Annual O&M Costs					\$ -
Net Present Worth of Annual O&M Costs				\$ -	
Total Net Present Worth of Alternative				\$ 1,580,700	

Note: At time estimate was prepared, ENRCCI = 11392 (January 2020)

<b>TABLE B-SF1 - PRELIMINARY COST ESTIMATE</b> <b>SOIL/FILL - ALTERNATIVE 1</b> <b>NO ACTION</b>					
<b>Component</b>	<b>Estimated Quantity</b>	<b>Unit</b>	<b>Estimated Unit Cost</b>	<b>Estimated Capital Cost</b>	<b>Estimated Annual O&amp;M Cost</b>
<u>Capital Costs</u>					
<i>Direct Implementation Costs</i>					
Subtotal - Direct Costs				\$ -	
<i>Indirect Costs</i>					
Remedial Design	(10% of Direct Costs)			\$ -	
Mobilization/Misc. Site Prep	(5% of Direct Costs)			\$ -	
Site Administration	(5% of Direct Costs)			\$ -	
Permitting/Legal Costs	(2% of Direct Costs)			\$ -	
Construction Management/Oversight	(10% of Direct Costs)			\$ -	
Subtotal - Indirect Costs				\$ -	
Contingency - 25% of Direct and Indirect Costs				\$ -	
<b>Total Capital Costs</b>				<b>\$ -</b>	
<u>Operation and Maintenance Costs</u>					
Site Inspections/Maintenance					\$ -
Five-Year Reviews					\$ -
Subtotal - O&M Costs					\$ -
Contingency Reserve - 25% of O&M Costs					\$ -
<b>Total Annual O&amp;M Costs</b>					<b>\$ -</b>
<b>Net Present Worth of Annual O&amp;M Costs</b>				<b>\$ -</b>	
<b>Total Net Present Worth of Alternative</b>				<b>\$ -</b>	

Note: At time estimate was prepared, ENRCCI = 11392 (January 2020)



**TABLE B-SF2 - PRELIMINARY COST ESTIMATE**  
**SOIL/FILL - ALTERNATIVE 2**  
**INSTITUTIONAL CONTROLS AND NAPL REMOVAL**

Component	Estimated Quantity	Unit	Estimated Unit Cost	Estimated Capital Cost	Estimated Annual O&M Cost
<u>Capital Costs</u>					
<i>Direct Implementation Costs</i>					
Deed Restrictions (legal/filing)	15	Lots	\$ 4,000	\$ 60,000	
Fencing Enhancements	1,000	LF	\$ 20	\$ 20,000	
NAPL Removal					
Excavate/Load Soil/Fill	310	CY	\$ 15	\$ 4,650	
Waste Disposal, Petroleum-impacted (T&D)	510	Ton	\$ 75	\$ 38,250	
Soil Treatment	510	Ton	\$ 25	\$ 12,750	
Clean Backfill (provide/place/compact)	510	Ton	\$ 60	\$ 30,600	
6" Gravel Surface at NAPL Footprint	135	SY	\$ 18	\$ 2,430	
Subtotal - Direct Costs				\$ 168,680	
<i>Indirect Costs</i>					
Predesign Investigation	Lump Sum			\$ 20,000	
Remedial Design	(10% of Direct Costs)			\$ 16,868	
Mobilization/Misc. Site Prep	(5% of Direct Costs)			\$ 8,434	
Site Administration	(5% of Direct Costs)			\$ 8,434	
Permitting/Legal Costs	(2% of Direct Costs)			\$ 3,374	
Construction Management/Oversight	(10% of Direct Costs)			\$ 16,868	
Subtotal - Indirect Costs				\$ 73,978	
Contingency - 25% of Direct and Indirect Costs				\$ 60,664	
Total Capital Costs				\$ 303,322	
<u>Operation and Maintenance Costs</u>					
Site Inspections/Maintenance	1	Annual	\$ 1,500		\$ 1,500
Five-Year Reviews	1	Annualized	\$ 5,000		\$ 5,000
Subtotal - O&M Costs					\$ 6,500
Contingency Reserve - 25% of O&M Costs					\$ 1,625
Total Annual O&M Costs					\$ 8,125
Net Present Worth of Annual O&M Costs				\$ 88,100	
Total Net Present Worth of Alternative				\$ 356,100	

Note: At time estimate was prepared, ENRCCI = 11392 (January 2020)

**TABLE B-SF3 - PRELIMINARY COST ESTIMATE**  
**SOIL/FILL - ALTERNATIVE 3**  
**INSTITUTIONAL CONTROLS, ENGINEERING CONTROLS, AND NAPL REMOVAL**

Component	Estimated Quantity	Unit	Estimated Unit Cost	Estimated Capital Cost	Estimated Annual O&M Cost
<b>Capital Costs</b>					
<i>Direct Implementation Costs</i>					
Deed Restrictions (legal/filing)	15	Lots	\$ 4,000	\$ 60,000	
Fencing Enhancements	1,000	LF	\$ 20	\$ 20,000	
<i>Site Preparation</i>					
Clear Vegetation	0.5	Ac	\$ 1,500	\$ 750	
Asphalt and Debris Removal	1	LS	\$ 25,000	\$ 25,000	
Asphalt and Debris Disposal (T&D)	7800	Ton	\$ 75	\$ 585,000	
<i>Asphalt Cap</i>					
Regrade as needed to level surface	2000	CY	\$ 20	\$ 40,000	
Base gravel - 6"	27,200	SY	\$ 18	\$ 489,600	
Bituminous concrete - 6"	27,200	SY	\$ 48	\$ 1,305,600	
Seal coating	27,200	SY	\$ 1.25	\$ 34,000	
<i>NAPL Removal</i>					
Excavate/Load Soil/Fill	310	CY	\$ 15	\$ 4,650	
Waste Disposal, Petroleum-impacted (T&D)	510	Ton	\$ 75	\$ 38,250	
Soil Treatment	510	Ton	\$ 25	\$ 12,750	
Clean Backfill (provide/place/compact)	510	Ton	\$ 60	\$ 30,600	
<i>Vertical Barrier</i>					
Temporary Silt Screens in river	1	LS	\$ 25,000	\$ 25,000	
Old Wall Excavation (non soil/fill debris)	240	CY	\$ 50	\$ 12,000	
Decontamination and Disposal of Old Wall (non-soil/fill debris, T&D)	400	Ton	\$ 250	\$ 100,000	
Sheet Pile Installation (800' x 30')	24,000	SF	\$ 150	\$ 3,600,000	
Seal inactive wall pipes	1	LS	\$ 35,000	\$ 35,000	
Subtotal - Direct Costs				\$ 6,418,200	
<i>Indirect Costs</i>					
Geotechnical Investigation		Lump Sum		\$ 60,000	
Predesign Investigation/Soil Delineation		Lump Sum		\$ 250,000	
Remedial/Geotechnical Design		(10% of Direct Costs)		\$ 641,820	
Mobilization/Misc. Site Prep		(5% of Direct Costs)		\$ 320,910	
Site Administration		(5% of Direct Costs)		\$ 320,910	
Permitting/Legal Costs		(2% of Direct Costs)		\$ 128,364	
Construction Management/Oversight		(10% of Direct Costs)		\$ 641,820	
Subtotal - Indirect Costs				\$ 2,363,824	
Diamond Alkali OU2 Contingency				\$ 200,000	
Contingency - 25% of Direct and Indirect Costs				\$ 2,195,506	
<b>Total Capital Costs</b>				<b>\$ 11,177,530</b>	
<b>Operation and Maintenance Costs</b>					
Site Inspections/Maintenance	4	Qtr	\$ 5,000		\$ 20,000
Renew Top Coat every 10 yrs (annualized cost)	1	annualized	\$ 35,000		\$ 35,000
Five-Year Reviews	1	annualized	\$ 5,000		\$ 5,000
Subtotal - O&M Costs					\$ 60,000
Contingency Reserve - 25% of O&M Costs					\$ 15,000
<b>Total Annual O&amp;M Costs</b>					<b>\$ 75,000</b>
<b>Net Present Worth of Annual O&amp;M Costs</b>				<b>\$ 812,900</b>	
<b>Total Net Present Worth of Alternative</b>				<b>\$ 10,483,700</b>	

Note: At time estimate was prepared, ENRCCI = 11392 (January 2020)

**TABLE B-SF4 - PRELIMINARY COST ESTIMATE**  
**SOIL/FILL - ALTERNATIVE 4**  
**INSTITUTIONAL CONTROLS, ENGINEERING CONTROLS, FOCUSED REMOVAL WITH**  
**OFF-SITE DISPOSAL OF LEAD AND NAPL REMOVAL**

	Estimated Quantity	Unit	Estimated Unit Cost	Estimated Capital Cost	Estimated Annual O&M Cost
<b>Capital Costs</b>					
<i>Direct Implementation Costs</i>					
Deed Restrictions (legal/filing)	15	Lots	\$ 4,000	\$ 60,000	
Fencing Enhancements	1,000	LF	\$ 20	\$ 20,000	
Site Preparation					
Clear Vegetation	0.5	Ac	\$ 1,500	\$ 750	
Asphalt and Debris Removal	1	LS	\$ 25,000	\$ 25,000	
Asphalt and Debris Disposal (T&D)	7800	Ton	\$ 75	\$ 585,000	
Asphalt Cap					
Regrade as needed to level surface	2000	CY	\$ 20	\$ 40,000	
Base gravel - 6"	27,200	SY	\$ 18	\$ 489,600	
Bituminous concrete - 6"	24,800	SY	\$ 48	\$ 1,190,400	
Seal coating	24,800	SY	\$ 1.25	\$ 31,000	
NAPL Removal					
Excavate/Load Soil/Fill	310	CY	\$ 15	\$ 4,650	
Waste Disposal, Petroleum-impacted (T&D)	510	Ton	\$ 75	\$ 38,250	
Soil Treatment	510	Ton	\$ 25	\$ 12,750	
Clean Backfill (provide/place/compact)	510	Ton	\$ 60	\$ 30,600	
Vertical Barrier					
Temporary Silt Screens in river	1	LS	\$ 25,000	\$ 25,000	
Old Wall Excavation (non soil/fill debris)	240	CY	\$ 50	\$ 12,000	
Decontamination and Disposal of Old Wall (non-soil/fill debris, T&D)	400	Ton	\$ 250	\$ 100,000	
Sheet Pile Installation (800' x 30')	24,000	SF	\$ 150	\$ 3,600,000	
Seal inactive wall pipes	1	LS	\$ 35,000	\$ 35,000	
Limited Excavation/Disposal					
Foundation Protection During Excavation	1	LS	\$ 200,000	\$ 200,000	
Excavate/load soils	5,100	CY	\$ 15	\$ 76,500	
Disposal of soils (non-haz, T&D)	8,415	Ton	\$ 75	\$ 631,125	
Soil Treatment for Disposal	8,415	Ton	\$ 25	\$ 210,375	
Clean Backfill (provide/place/compact)	8,415	Ton	\$ 60	\$ 504,900	
Subtotal - Direct Costs				\$ 7,922,900	
<i>Indirect Costs</i>					
Geotechnical Investigation		Lump Sum		\$ 60,000	
Predesign Investigation/Soil Delineation		Lump Sum		\$ 250,000	
Remedial Design		(10% of Direct Costs)		\$ 792,290	
Mobilization/Misc. Site Prep		(5% of Direct Costs)		\$ 396,145	
Site Administration		(5% of Direct Costs)		\$ 396,145	
Permitting/Legal Costs		(2% of Direct Costs)		\$ 158,458	
Oversight/Post-Ex Sampling		(10% of Direct Costs)		\$ 792,290	
Subtotal - Indirect Costs				\$ 2,845,328	
Diamond Alkali OU2 Contingency				\$ 200,000	
Contingency - 25% of Direct and Indirect Costs				\$ 2,692,057	
<b>Total Capital Costs</b>				<b>\$ 13,660,285</b>	
<b>Operation and Maintenance Costs</b>					
Site Inspections/Maintenance	4	Qtr	\$ 5,000		\$ 20,000
Renew Top Coat every 10 yrs (annualized cost)	1	annualized	\$ 35,000		\$ 35,000
Five-Year Reviews	1	annualized	\$ 5,000		\$ 5,000
Subtotal - O&M Costs					\$ 60,000
Contingency Reserve - 25% of O&M Costs					\$ 15,000
<b>Total Annual O&amp;M Costs</b>					<b>\$ 75,000</b>
<b>Net Present Worth of Annual O&amp;M Costs</b>				<b>\$ 812,900</b>	
<b>Total Net Present Worth of Alternative</b>				<b>\$ 12,665,900</b>	

Note: At time estimate was prepared, ENRCCI = 11392 (January 2020)

**TABLE B-SF5 - PRELIMINARY COST ESTIMATE**  
**SOIL/FILL - ALTERNATIVE 5**  
**INSTITUTIONAL CONTROLS, IN-SITU REMEDIATION, ENGINEERING CONTROLS, AND NAPL REMOVAL**

Component	Estimated Quantity	Unit	Estimated Unit Cost	Estimated Capital Cost	Estimated Annual O&M Cost
<u>Capital Costs</u>					
<i>Direct Implementation Costs</i>					
Deed Restrictions (legal/filing)	15	Lots	\$ 4,000	\$ 60,000	
Fencing Enhancements	1,000	LF	\$ 20	\$ 20,000	
Site Preparation					
Clear Vegetation	0.5	Ac	\$ 1,500	\$ 750	
Asphalt and Debris Removal	1	LS	\$ 25,000	\$ 25,000	
Asphalt and Debris Disposal (T&D)	7800	Ton	\$ 75	\$ 585,000	
NAPL Removal					
Excavate/Load Soil/Fill	310	CY	\$ 15	\$ 4,650	
Waste Disposal, Petroleum-impacted (T&D)	510	Ton	\$ 75	\$ 38,250	
Soil Treatment	510	Ton	\$ 25	\$ 12,750	
Clean Backfill (provide/place/compact)	510	Ton	\$ 60	\$ 30,600	
Vertical Barrier					
Temporary Silt Screens in river	1	LS	\$ 25,000	\$ 25,000	
Old Wall Excavation (non soil/fill debris)	240	CY	\$ 50	\$ 12,000	
Decontamination and Disposal of Old Wall (non-soil/fill debris, T&D)	400	Ton	\$ 250	\$ 100,000	
Sheet Pile Installation (800' x 30')	24,000	SF	\$ 150	\$ 3,600,000	
Seal inactive wall pipes	1	LS	\$ 35,000	\$ 35,000	
In-Situ Treatment					
Excavate top 18"	5100	CY	\$ 15	\$ 76,500	
Dispose top 18" (T&D)	8,420	Ton	\$ 75	\$ 631,500	
Regrade as needed to level surface	500	CY	\$ 20	\$ 10,000	
Insitu Solidification and Stabilization	30,500	CY	\$ 60	\$ 1,830,000	
Base gravel - 6"	27,200	SY	\$ 18	\$ 489,600	
Bituminous concrete - 6"	27,200	SY	\$ 48	\$ 1,305,600	
Subtotal - Direct Costs				\$ 8,892,200	
<i>Indirect Costs</i>					
Geotechnical Investigation	Lump Sum			\$ 60,000	
Predesign Investigation/Soil Delineation	Lump Sum			\$ 250,000	
Remedial Design, incl. treatability testing	(10% of Direct Costs)			\$ 889,220	
Mobilization/Misc. Site Prep	(5% of Direct Costs)			\$ 444,610	
Site Administration	(5% of Direct Costs)			\$ 444,610	
Permitting/Legal Costs	(2% of Direct Costs)			\$ 177,844	
Constr. Mgmt/Oversight/Post-Ex Sampling	(10% of Direct Costs)			\$ 889,220	
Subtotal - Indirect Costs				\$ 3,155,504	
Diamond Alkali OU2 Contingency				\$ 200,000	
Contingency - 25% of Direct and Indirect Costs				\$ 3,011,926	
Total Capital Costs				\$ 15,259,630	
<u>Operation and Maintenance Costs</u>					
Site Inspections/Maintenance	4	Qtr	\$ 3,750		\$ 15,000
Renew Top Coat every 10 yrs	1	annualized	\$ 35,000		\$ 35,000
Five-Year Reviews	1	annualized	\$ 5,000		\$ 5,000
Subtotal - O&M Costs					\$ 55,000
Contingency Reserve - 25% of O&M Costs					\$ 13,750
Total Annual O&M Costs					\$ 68,750
Net Present Worth of Annual O&M Costs				\$ 745,100	
Total Net Present Worth of Alternative				\$ 14,004,000	

Note: At time estimate was prepared, ENRCCI = 11392 (January 2020)

**TABLE B-GW1 - PRELIMINARY COST ESTIMATE**  
**GROUNDWATER - ALTERNATIVE 1**  
**NO ACTION**

Component	Estimated Quantity	Unit	Estimated Unit Cost	Estimated Capital Cost	Estimated Annual O&M Cost
<u>Capital Costs</u>					
<i>Direct Implementation Costs</i>				\$ -	
			Subtotal - Direct Costs	\$ -	
<i>Indirect Costs</i>					
Remedial Design		(10% of Direct Costs)		\$ -	
Mobilization/Misc. Site Prep		(5% of Direct Costs)		\$ -	
Site Administration		(5% of Direct Costs)		\$ -	
Permitting/Legal Costs		(2% of Direct Costs)		\$ -	
Construction Management/Oversight		(10% of Direct Costs)		\$ -	
			Subtotal - Indirect Costs	\$ -	
			Contingency - 25% of Direct and Indirect Costs	\$ -	
			<b>Total Capital Costs</b>	\$ -	
<u>Operation and Maintenance Costs</u>					
Site Inspections/Maintenance					\$ -
Five-year Reviews (annualized cost)					\$ -
			Subtotal - O&M Costs		\$ -
			Contingency Reserve - 25% of O&M Costs		\$ -
			<b>Total Annual O&amp;M Costs</b>		\$ -
			<b>Net Present Worth of Annual O&amp;M Costs</b>	\$ -	
			<b>Total Net Present Worth of Alternative</b>	\$ -	

Note: At time estimate was prepared, ENRCCI = 11392 (January 2020)

**TABLE B-GW2 - PRELIMINARY COST ESTIMATE**  
**GROUNDWATER - ALTERNATIVE 2**  
**INSTITUTIONAL CONTROLS, CONTAINMENT AT RIVER AT RIVER EDGE, AND PUMP AND TREAT**

Component	Estimated Quantity	Unit	Estimated Unit Cost	Estimated Capital Cost	Estimated Annual O&M Cost
<b>Capital Costs</b>					
<i>Direct Implementation Costs</i>					
CEA/WRA Submissions	1	LS	\$ 75,000	\$ 75,000	
Year 1 Groundwater Monitoring	4	LS	\$ 45,000	\$ 180,000	
Sheet Pile Containment Installation	70,000	SF	\$ 150	\$ 10,500,000	
Fill Between Old and New Wall	975	CY	\$ 125	\$ 121,875	
Extraction Well, pump, riser, well head, pump	20	EA	\$ 2,500	\$ 50,000	
Conveyance Trenching/Fill	2,500	LF	\$ 40	\$ 100,000	
Piping, conduit, wiring, instrumentation	30,000	LF	\$ 37	\$ 1,110,000	
Treatment Building, Pad, Utilities	7,500	SF	\$ 250	\$ 1,875,000	
Utilities (sewer, water, electrical)	1	LS	\$ 100,000	\$ 100,000	
Discharge line	500	LF	\$ 150	\$ 75,000	
200 gpm Treatment System (includes equipment, installation, labor)					
Process Water Tanks	1	LS	\$ 150,000	\$ 150,000	
Oxidation System	1	LS	\$ 500,000	\$ 500,000	
Filtration Units	1	LS	\$ 400,000	\$ 400,000	
Metals Precipitation System	1	LS	\$ 275,000	\$ 275,000	
Sludge Processing	1	LS	\$ 150,000	\$ 150,000	
Carbon Adsorption Units	1	LS	\$ 250,000	\$ 250,000	
Pumps and Piping	1	LS	\$ 150,000	\$ 150,000	
Electrical, Instrumentation, Controls	1	LS	\$ 1,500,000	\$ 1,500,000	
Chemical Feed System	1	LS	\$ 175,000	\$ 175,000	
Subtotal - Direct Costs				\$17,736,875	
<i>Indirect Costs</i>					
Predesign Investigation		Lump Sum		\$ 750,000	
Geotechnical Investigation		Lump Sum		\$ 150,000	
Remedial Design		(10% of Direct Costs)		\$ 1,773,688	
Mobilization/Misc. Site Prep		(5% of Direct Costs)		\$ 886,844	
Site Administration		(5% of Direct Costs)		\$ 886,844	
Permitting/Legal Costs		(2% of Direct Costs)		\$ 354,738	
Construction Management/Oversight		(10% of Direct Costs)		\$ 1,773,688	
Subtotal - Indirect Costs				\$ 6,575,800	
Diamond Alkali OU2 Contingency				\$ 200,000	
Contingency - 25% of Direct and Indirect Costs				\$ 6,078,169	
<b>Total Capital Costs</b>				<b>\$ 30,590,844</b>	
<b>Operation and Maintenance Costs</b>					
Routine Groundwater Monitoring	2	event	\$ 45,000		\$ 90,000
Biennial Sampling Per CEA (annualized costs)	1	event	\$ 10,000		\$ 10,000
Treatment System					
Utilities	1	LS	\$ 150,000		\$ 150,000
Chemicals (oxidant, pH adjustment, etc.)	1	LS	\$ 50,000		\$ 50,000
Carbon Changeout	1	LS	\$ 50,000		\$ 50,000
Sludge/Waste Management	1	LS	\$ 50,000		\$ 50,000
Routine O&M (staffed 40 hrs per wk)	1	LS	\$ 320,000		\$ 320,000
Non Routine Maintenance	1	LS	\$ 25,000		\$ 25,000
Performance Sampling	1	LS	\$ 150,000		\$ 150,000
Five-Year Reviews	1	annualized	\$ 5,000		\$ 5,000
Subtotal - O&M Costs					\$ 900,000
Contingency Reserve - 25% of O&M Costs					\$ 225,000
<b>Total Annual O&amp;M Costs</b>					<b>\$ 1,125,000</b>
<b>Net Present Worth of Annual O&amp;M Costs</b>				<b>\$ 10,650,100</b>	
<b>Total Net Present Worth of Alternative</b>				<b>\$ 34,258,600</b>	

Note: At time estimate was prepared, ENRCCI = 11392 (January 2020)

**TABLE B-GW3 - PRELIMINARY COST ESTIMATE**  
**GROUNDWATER - ALTERNATIVE 3**  
**INSTITUTIONAL CONTROLS AND IN-SITU REMEDIATION**

Component	Estimated Quantity	Unit	Estimated Unit Cost	Estimated Capital Cost	Estimated Annual O&M Cost
<u>Capital Costs</u>					
<i>Direct Implementation Costs</i>					
CEA/WRA Submissions	1	LS	\$ 75,000	\$ 75,000	
1st Year Groundwater Monitoring	4	Event	\$ 45,000	\$ 180,000	
Initial Chemical Treatment (organics)	1,622,250	LB	\$ 1.75	\$ 2,838,938	
Initial Chemical Treatment (inorganics)	1,954,500	LB	\$ 2.25	\$ 4,397,625	
Inject labor/equipment	300	Day	\$ 3,500	\$ 1,050,000	
Round 2 Injections (67% , chemicals and labor)	1	LS	\$ 5,551,997	\$ 5,551,997	
Round 3 Injections (33% , chemicals and labor)	1	LS	\$ 2,775,998	\$ 2,775,998	
Subtotal - Direct Costs				\$16,869,558	
<i>Indirect Costs</i>					
Predesign Investigation	Lump Sum			\$ 500,000	
Remedial Design	(10% of Direct Costs)			\$ 1,686,956	
Mobilization/Misc. Site Prep	(5% of Direct Costs)			\$ 843,478	
Site Administration	(5% of Direct Costs)			\$ 843,478	
Permitting/Legal Costs	(2% of Direct Costs)			\$ 337,391	
Construction Management/Oversight	(10% of Direct Costs)			\$ 1,686,956	
Subtotal - Indirect Costs				\$ 5,898,259	
Contingency - 25% of Direct and Indirect Costs				\$ 5,691,954	
Total Capital Costs				\$ 28,459,770	
<u>Operation and Maintenance Costs</u>					
Routine Groundwater Monitoring	2	Event	\$ 45,000		\$ 90,000
Biennial Sampling per CEA (annualized cost)	1	Event	\$ 10,000		\$ 10,000
Five-year Reviews (annualized cost)	1	(annualized)	\$ 5,000		\$ 5,000
Subtotal - O&M Costs					\$ 105,000
Contingency Reserve - 25% of O&M Costs					\$ 26,250
Total Annual O&M Costs					\$ 131,250
Net Present Worth of Annual O&M Costs				\$ 1,242,500	
Total Net Present Worth of Alternative				\$ 20,844,800	

Note: At time estimate was prepared, ENRCCI = 11392 (January 2020)

**TABLE B-GW4 - PRELIMINARY COST ESTIMATE**  
**GROUNDWATER - ALTERNATIVE 4**  
**INSTITUTIONAL CONTROLS, PUMP AND TREAT, AND TARGETED PERIODIC IN-SITU REMEDIATION**

Component	Estimated Quantity	Unit	Estimated Unit Cost	Estimated Capital Cost	Estimated Annual O&M Cost
<b>Capital Costs</b>					
<i>Direct Implementation Costs</i>					
CEA/WRA Submissions	1	LS	\$ 75,000	\$ 75,000	
Year 1 Groundwater Monitoring	4	LS	\$ 45,000	\$ 180,000	
Extraction Well, pump, riser, well head, pump	20	EA	\$ 1,500	\$ 30,000	
Conveyance Trenching/Fill	2,500	CY	\$ 40	\$ 100,000	
Piping, conduit, wiring, instrumentation	30,000	LF	\$ 37	\$ 1,110,000	
Treatment Building, Pad, Utilities	7,500	SF	\$ 250	\$ 1,875,000	
Utilities (sewer, water, electrical)	1	LS	\$ 100,000	\$ 100,000	
Discharge line	500	LF	\$ 150	\$ 75,000	
200 gpm Treatment System, includes equipment, installation, labor					
Process Water Tanks	1	LS	\$ 150,000	\$ 150,000	
Oxidation System	1	LS	\$ 500,000	\$ 500,000	
Filtration Units	1	LS	\$ 400,000	\$ 400,000	
Metals Precipitation System	1	LS	\$ 275,000	\$ 275,000	
Sludge Processing	1	LS	\$ 150,000	\$ 150,000	
Carbon Adsorption Units	1	LS	\$ 250,000	\$ 250,000	
Pumps and Piping	1	LS	\$ 150,000	\$ 150,000	
Electrical, Instrumentation, Controls	1	LS	\$ 1,500,000	\$ 1,500,000	
Chemical Feed System	1	LS	\$ 175,000	\$ 175,000	
Subtotal - Direct Costs				\$7,095,000	
<i>Indirect Costs</i>					
Pre-design Investigation		Lump Sum		\$ 750,000	
Geotechnical Investigation		Lump Sum		\$ 150,000	
Remedial Design		(10% of Direct Costs)		\$ 709,500	
Mobilization/Misc. Site Prep		(5% of Direct Costs)		\$ 354,750	
Site Administration		(5% of Direct Costs)		\$ 354,750	
Permitting/Legal Costs		(2% of Direct Costs)		\$ 141,900	
Construction Management/Oversight		(10% of Direct Costs)		\$ 709,500	
Subtotal - Indirect Costs				\$ 3,170,400	
Contingency - 25% of Direct and Indirect Costs				\$ 2,566,350	
<b>Total Capital Costs</b>				<b>\$ 12,831,750</b>	
<b>Operation and Maintenance Costs</b>					
Routine Groundwater Monitoring	2	event	\$ 45,000		\$ 90,000
Biennial Sampling Per CEA (annualized costs)	1	event	\$ 10,000		\$ 10,000
Treatment System					
Utilities	1	LS	\$ 150,000		\$ 150,000
Chemicals (oxidant, pH adjustment, etc.)	1	LS	\$ 50,000		\$ 50,000
Carbon Changeout	1	LS	\$ 50,000		\$ 50,000
Sludge/Waste Management	1	LS	\$ 50,000		\$ 50,000
Routine O&M (staffed 40 hrs per wk)	1	LS	\$ 320,000		\$ 320,000
Non Routine Maintenance	1	LS	\$ 25,000		\$ 25,000
Performance Sampling	1	LS	\$ 150,000		\$ 150,000
In-situ Targeted Treatment for Selected Contaminants	1	LS	\$ 300,000		\$ 300,000
Five-year Reviews	1	annualized	\$ 5,000		\$ 5,000
Subtotal - O&M Costs					\$ 1,200,000
Contingency Reserve - 25% of O&M Costs					\$ 300,000
<b>Total Annual O&amp;M Costs</b>					<b>\$ 1,500,000</b>
<b>Net Present Worth of Annual O&amp;M Costs</b>				<b>\$ 14,200,200</b>	
<b>Total Net Present Worth of Alternative</b>				<b>\$ 24,234,400</b>	

Note: At time estimate was prepared, ENRCCI = 11392 (January 2020)



**TABLE B-GW5 - PRELIMINARY COST ESTIMATE**  
**GROUNDWATER - ALTERNATIVE 5**  
**INSTITUTIONAL CONTROLS, SITE CONTAINMENT AT RIVER EDGE AND FOCUSED IN-SITU REMEDIATION**

Component	Estimated Quantity	Unit	Estimated Unit Cost	Estimated Capital Cost	Estimated Annual O&M Cost
<b>Capital Costs</b>					
<i>Direct Implementation Costs</i>					
CEA/WRA Submissions	1	LS	\$ 75,000	\$ 75,000	
1st Year Groundwater Monitoring	4	Event	\$ 45,000	\$ 180,000	
Sheet Pile Containment Installation	70,000	SF	\$ 150	\$ 10,500,000	
Fill Between Old and New Wall	975	CY	\$ 125	\$ 121,875	
Initial Chemical Treatment (organics)	117,750	LB	\$ 1.75	\$ 206,063	
Inject labor/equipment	25	Day	\$ 3,500	\$ 87,500	
Round 2 Injections (67% , chemicals and labor)	1	LS	\$ 196,687	\$ 196,687	
Round 3 Injections (33% , chemicals and labor)	1	LS	\$ 98,343	\$ 98,343	
Subtotal - Direct Costs				\$11,465,468	
<i>Indirect Costs</i>					
Predesign Investigation		Lump Sum		\$ 350,000	
Geotechnical Investigation		Lump Sum		\$ 150,000	
Remedial Design		(10% of Direct Costs)		\$ 1,146,547	
Mobilization/Misc. Site Prep		(5% of Direct Costs)		\$ 573,273	
Site Administration		(5% of Direct Costs)		\$ 573,273	
Permitting/Legal Costs		(2% of Direct Costs)		\$ 229,309	
Construction Management/Oversight		(10% of Direct Costs)		\$ 1,146,547	
Subtotal - Indirect Costs				\$ 4,168,950	
Contingency - 25% of Direct and Indirect Costs				\$ 3,908,604	
<b>Total Capital Costs</b>				<b>\$ 19,543,022</b>	
<b>Operation and Maintenance Costs</b>					
Routine Groundwater Monitoring	2	Event	\$ 45,000		\$ 90,000
Biennial Sampling per CEA (annualized cost)	1	Event	\$ 10,000		\$ 10,000
Five-year Reviews (annualized cost)	1	(annualized)	\$ 5,000		\$ 5,000
Subtotal - O&M Costs					\$ 105,000
Contingency Reserve - 25% of O&M Costs					\$ 26,250
<b>Total Annual O&amp;M Costs</b>					<b>\$ 131,250</b>
<b>Net Present Worth of Annual O&amp;M Costs</b>				<b>\$ 1,242,500</b>	
<b>Total Net Present Worth of Alternative</b>				<b>\$ 16,326,900</b>	

Note: At time estimate was prepared, ENRCCI = 11392 (January 2020)

**TABLE B-SW1 - PRELIMINARY COST ESTIMATE**  
**SEWER WATER - ALTERNATIVE 1**  
**NO ACTION**

Component	Estimated Quantity	Unit	Estimated Unit Cost	Estimated Capital Cost	Estimated Annual O&M Cost
<u>Capital Costs</u>					
<i>Direct Implementation Costs</i>					
			Subtotal - Direct Costs	\$ -	
<i>Indirect Costs</i>					
Remedial Design		(10% of Direct Costs)		\$ -	
Mobilization/Misc. Site Prep		(5% of Direct Costs)		\$ -	
Site Administration		(5% of Direct Costs)		\$ -	
Permitting/Legal Costs		(2% of Direct Costs)		\$ -	
Construction Management/Oversight		(10% of Direct Costs)		\$ -	
			Subtotal - Indirect Costs	\$ -	
			Contingency - 25% of Direct and Indirect Costs	\$ -	
			<b>Total Capital Costs</b>	\$ -	
<u>Operation and Maintenance Costs</u>					
					\$ -
			Subtotal - O&M Costs		\$ -
			Contingency Reserve - 25% of O&M Costs		\$ -
			<b>Total Annual O&amp;M Costs</b>		\$ -
			<b>Net Present Worth of Annual O&amp;M Costs</b>	\$ -	
			<b>Total Net Present Worth of Alternative</b>	\$ -	

Note: At time estimate was prepared, ENRCCI = 11392 (January 2020)

**TABLE B-SW2 - PRELIMINARY COST ESTIMATE  
SEWER WATER - ALTERNATIVE 2  
REMOVAL AND OFF-SITE DISPOSAL**

Component	Estimated Quantity	Unit	Estimated Unit Cost	Estimated Capital Cost	Estimated Annual O&M Cost
<u>Capital Costs</u>					
<i>Direct Implementation Costs</i>					
Removal of Liquids/Solids	1	LS	\$ 5,000	\$ 5,000	
Pressure Wash Manhole	1	LS	\$ 3,000	\$ 3,000	
Waste Disposal (liquids, non-haz, T&D)	2,500	Gallons	\$ 0.30	\$ 750	
Waste Disposal (solids, non-haz, T&D)	2	Drums	\$ 250	\$ 500	
Disconnect and Grout Pipe and Manhole	1	LS	\$ 5,000	\$ 5,000	
Subtotal - Direct Costs				\$ 14,250	
<i>Indirect Costs</i>					
Remedial Design	Lump Sum			\$ 5,000	
Mobilization/Misc. Site Prep	(5% of Direct Costs)			\$ 713	
Site Administration	(5% of Direct Costs)			\$ 713	
Permitting/Legal Costs	(2% of Direct Costs)			\$ 285	
Construction Management/Overisght	(10% of Direct Costs)			\$ 1,425	
Subtotal - Indirect Costs				\$ 8,135	
Contingency - 25% of Direct and Indirect Costs				\$ 5,596	
Total Capital Costs				\$ 27,981	
<u>Operation and Maintenance Costs</u>					
					\$ -
Subtotal - O&M Costs					\$ -
Contingency Reserve - 25% of O&M Costs					\$ -
Total Annual O&M Costs					\$ -
Net Present Worth of Annual O&M Costs				\$ -	
Total Net Present Worth of Alternative				\$ 24,900	

Note: At time estimate was prepared, ENRCCI = 11392 (January 2020)

**TABLE B-SG1 - PRELIMINARY COST ESTIMATE**  
**SOIL GAS - ALTERNATIVE 1**  
**NO ACTION**

Component	Estimated Quantity	Unit	Estimated Unit Cost	Estimated Capital Cost	Estimated Annual O&M Cost
<u>Capital Costs</u>					
<i>Direct Implementation Costs</i>					
Subtotal - Direct Costs				\$ -	
<i>Indirect Costs</i>					
Remedial Design	(10% of Direct Costs)			\$ -	
Mobilization/Misc. Site Prep	(5% of Direct Costs)			\$ -	
Site Administration	(5% of Direct Costs)			\$ -	
Permitting/Legal Costs	(2% of Direct Costs)			\$ -	
Construction Management/Oversight	(10% of Direct Costs)			\$ -	
Subtotal - Indirect Costs				\$ -	
Contingency - 25% of Direct and Indirect Costs				\$ -	
<b>Total Capital Costs</b>				<b>\$ -</b>	
<u>Operation and Maintenance Costs</u>					\$ -
Contingency Reserve - 25% of O&M Costs					\$ -
<b>Total Annual O&amp;M Costs</b>					<b>\$ -</b>
<b>Net Present Worth of Annual O&amp;M Costs</b>				<b>\$ -</b>	

Note: At time estimate was prepared, ENRCCI = 11392 (January 2020)

**TABLE B-SG2 - PRELIMINARY COST ESTIMATE**  
**SOIL GAS - ALTERNATIVE 2**  
**INSTITUTIONAL CONTROLS, AIR MONITORING/ENGINEERING CONTROLS, AND SITE-WIDE ENGINEERING CONTROLS**

Component	Estimated Quantity	Unit	Estimated Unit Cost	Estimated Capital Cost	Estimated Annual O&M Cost
<u>Capital Costs</u>					
<i>Direct Implementation Costs</i>					
Deed Restrictions/CEAs	15	Lots	\$ 4,000	\$ 60,000	
Initial Round of Indoor Air Monitoring (3/bldg)	21	Sample	\$ 1,500	\$ 31,500	
Subtotal - Direct Costs				\$ 91,500	
<i>Indirect Costs</i>					
Remedial Design	(5% of Direct Costs)			\$ 4,575	
Site Administration	(1% of Direct Costs)			\$ 915	
Permitting/Legal Costs	(1% of Direct Costs)			\$ 1,830	
Subtotal - Indirect Costs				\$ 7,320	
Contingency - 25% of Direct and Indirect Costs				\$ 24,705	
Total Capital Costs				\$ 123,525	
<u>Operation and Maintenance Costs</u>					
Indoor Air Monitoring	21	Sample	\$ 1,500		\$ 31,500
Subtotal - O&M Costs					\$ 31,500
Contingency - 25% of O&M Costs					\$ 31,500
Net Present Worth of Annual O&M Costs				\$ 341,400	
Total Net Present Worth of Alternative				\$ 449,800	

Note: At time estimate was prepared, ENRCCI = 11392 (January 2020)

**TABLE B-SG3 - PRELIMINARY COST ESTIMATE**  
**SOIL GAS - ALTERNATIVE 3**  
**INSTITUTIONAL CONTROLS, SITE-WIDE ENGINEERING CONTROLS, AND IN-SITU REMEDIATION**

Component	Estimated Quantity	Unit	Estimated Unit Cost	Estimated Capital Cost	Estimated Annual O&M Cost
<u>Capital Costs</u>					
<i>Direct Implementation Costs</i>					
Deed Restrictions/CEAs	15	Lots	\$ 4,000	\$ 60,000	
<i>In-Situ Treatment</i>					
Initial Chemical Treatment (organics)	570,322	LB	\$ 1.75	\$ 998,064	
Inject labor/equipment	90	Day	\$ 3,500	\$ 315,000	
Round 2 Injections (67% , chemicals and labor)	1	LS	\$ 879,753	\$ 879,753	
Round 3 Injections (33% , chemicals and labor)	1	LS	\$ 439,876	\$ 439,876	
Subtotal - Direct Costs				\$ 2,692,693	
<i>Indirect Costs</i>					
Delineation/Treatability Study	Lump Sum			\$ 200,000	
Remedial Design	(10% of Direct Costs)			\$ 269,269	
Mobilization/Misc. Site Prep	(5% of Direct Costs)			\$ 134,635	
Site Administration	(2% of Direct Costs)			\$ 53,854	
Permitting/Legal Costs	(2% of Direct Costs)			\$ 53,854	
Construction Management/Oversight	(10% of Direct Costs)			\$ 269,269	
Subtotal - Indirect Costs				\$ 980,881	
Contingency - 25% of Direct and Indirect Costs				\$ 918,394	
Total Capital Costs				\$ 4,591,968	
<u>Operation and Maintenance Costs</u>					
					\$ -
Subtotal - O&M Costs					\$ -
Contingency Reserve - 25% of O&M Costs					\$ -
Total Annual O&M Costs					\$ -
Net Present Worth of Annual O&M Costs				\$ -	
Total Net Present Worth of Alternative				\$ 4,050,800	

Note: At time estimate was prepared, ENRCCI = 11392 (January 2020)